Title (en)

LITHIUM COBALT OXIDES AND METHODS OF MAKING SAME

Title (de)

LITHIUM KOBALTOXIDE UND VERFAHREN ZUR HERSTELLUNG

Title (fr)

OXYDES DE LITHIUM-COBALT ET LEURS PROCEDES DE PREPARATION

Publication

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Application

EP 00982491 A 20001207

Priority

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Abstract (en)

[origin: WO0142141A1] The present invention includes lithium cobalt oxides having hexagonal layered crystal structures and methods of making same. The lithium cobalt oxides of the invention have the formula LiwCo1-xAxO2+y wherein 0.96≤w≤1.05, 0≤x≤0.05, -0.02≤y≤0.02 and A is one or more dopants. The lithium cobalt oxides of the invention preferably have a position within the principal component space defined by the relationship axi + byi ≤c, wherein xi = i.Pcl; yi = Si.Pc2; the vector Si is the x-ray spectrum for the LiwCo1-xAxO2+y compound; the vectors Pcl and Pc2 defining the principal component space are determined by measuring the x-ray powder diffraction values Si between 15 DEG and 120 DEG using a 0.02 DEG step size and CuK alpha rays for a large sample set of lithium cobalt oxides and using the regression of Si of the sample set against the capacity fade after 50 cycles of a lithium coin cell that includes a lithium negative electrode and the lithium cobalt oxide as the positive electrode material and that is cycled between 3.0 and 4.3V at a constant current of C/3 during both charge and discharge cycles; and the values a, b and c are determined by using only the xi and yi values for LiwCo1-xAxO2+y compounds in the sample set that have a capacity fade after 50 cycles of less than or equal to 15 %.

IPC 1-7

C01G 51/00; H01M 4/52

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